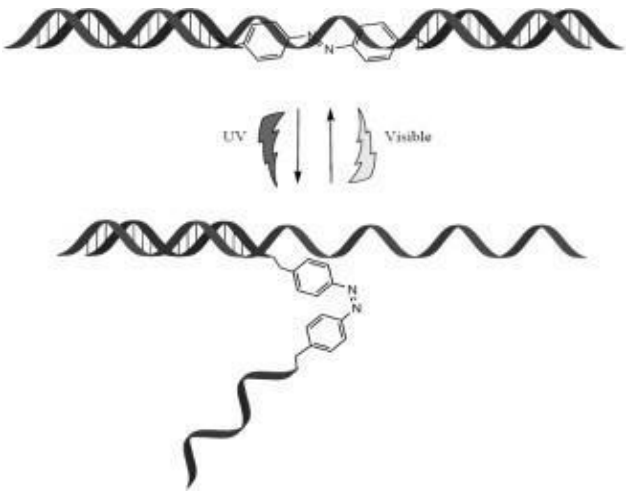
Reversible, Photo-Controlled siRNAs

TECHNOLOGY OVERVIEW

Background

This technology can have a prevalent use in cancer treatment. The global oncology market reached over $107 billion USD in 2015; the annual global growth rate in the oncology drug market is expected to be 7.5-10.5 percent with it reaching $120 billion USD by 2020. More specifically, the RNA therapeutics market is anticipated to reach $4.58 billion USD by 2022. The market is experiencing development as extensive ongoing research is contributing to the modulation of the treatment of diseases at a molecular level.

Technology Overview



siRNA is seen as a promising new technology for the development of therapeutics; however significant barriers to the development of successful siRNA therapies exist, such as off-targeting, stability, and immunological activation. The novel technology developed by Dr. Desaulniers and Mr. Hamill involves altering the central region of the sense strand with an azobenzene moiety. This development allows one to reversibly control the activity or inactivation of the siRNA via the presence or absence of UV or visible light. This important development provides a solution for many of the issues siRNA therapy currently faces. Upon further development, the technology has the potential to create new therapies (or increase the effectiveness of existing therapies) that can be injected in the inactive form, and then after it has been delivered could be light-activated in order to facilitate treatment in the desired area.

Business Opportunity

Ontario Tech University looks to work with companies in a way that helps develop a relationship that is tailored to their interests. Thus, we are happy to explore collaborations, licenses, options, assignments, etc. It is the belief that only through enabling the company to utilize its business model will Ontario Tech University technology be able to make an impact within the marketplace.

Inventors:

Dr. Jean-Paul Desaulniers and Mr. Matthew Hammil

Publication:

US Provisional Application: 62/512,319

Synthesis, Derivatization and Photochemical Control of an ortho-Functionalized Tetrafluorinated Azobenzene-Modified siRNA

About Ontario Tech University

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